BY ORDER OF THE COMMANDER 45TH SPACE WING

45TH SPACE WING INSTRUCTION 91-701

5 NOVEMBER 2014

Safety

45TH SPACE WING LAUNCH SAFETY SOFTWARE MANAGEMENT

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(Col Daniel F. Gottrich)

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This instruction implements Air Force Space Command Instruction 91-701, *Launch Safety Program Policy*. It establishes a uniform process to validate Launch Safety Software for operational use and establishes configuration control guidance for hardware and software modifications to the Safety Hazards Analysis and Risk Processing (SHARP) system. It also details how 45 SW/SEL will interact with the 45th Range Management Squadron (45 RMS) operational acceptance process, 45SWI10-602 45th Space Wing Eastern Range Acceptance Process. This instruction applies to 45th Space Wing Safety Office (45 SW/SE) and 45th Operations Group (45 OG) personnel. It is not applicable to Air National Guard or Air Force Reserve. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of in accordance with Air Force Records Information Management Systems (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF Form 947 from the field through the appropriate functional chain of command. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to certification and approval. Submit requests for waivers through the chain of command to the approval authority, or alternately, to the Publication OPR.

SUMMARY OF CHANGES

This publication has been substantially revised and must be completely reviewed. Minor changes include the replacement of 45 SW/SELP responsibilities with 45 SW/SEL and administrative corrections.

1. Objective.

1.1. This instruction provides management guidelines for 45 SW/SEL LSS developed and used to perform safety hazards analysis or risk management computation in support of ER missions. It addresses:

1.1.1. Requirements definitions and requirements change control.

1.1.2. Software development project planning and authorization.

1.1.3. Deficiency reporting and prioritization.

1.1.4. User evaluation of new or modified LSS.

1.1.5. Validation of new of modified LSS.

1.1.6. Operational Acceptance Board (OAB) acceptance of the data format generated by LSS for use as input to the Eastern Range Instrumentation System (ERIS).

1.1.7. Coordination and approval of associated ERIS interface control documentation.

2. Applicability.

2.1. This instruction applies to the management of LSS developed by 45 SW/SEL that performs non-real time flight safety hazards analysis or risk management computations in support of ER missions. It establishes essential activities for validating this software as suitable for ER mission support and, when required, operationally accepting its data products for use as input to an ERIS component. All legacy software versions fielded prior to 22 Aug 08 (the initial effective date of this instruction) do not have to be compliant with this instruction's provisions. All new software, and upgrades or modifications to legacy LSS, shall be compliant with this instruction's provisions. Compliance with AFMAN 33-153, *Information Technology (IT) Asset Management (ITAM)*, is mandatory.

3. Organizational Responsibilities for the Eastern Range LSS Management Process.

3.1. The 45th Space Wing Chief Safety Engineer (45 SW/SED):

3.1.1. Chairs, and is the approval authority for, the Safety Software Validation Board (SSVB).

3.1.2. Approves Safety Software Validation Memoranda (SSVM) and LSS requirements documentation.

3.2. The 45 OG:

3.2.1. Coordinates on Project Management Plans (PMP) for LSS projects that generate data products used as input to a 45 RMS-managed ERIS component.

3.2.2. Coordinates on Interface Control Document (ICD) changes associated with data products used as input to a 45 RMS-managed ERIS component.

3.2.3. Works with 45 SW/SE to prepare an Operational Acceptance Memorandum package for LSS that produces input data to a 45 RMS-managed ERIS component.

3.2.4. Optional advisor to the SSVB for LSS products that produce input data to a 45 RMS-managed ERIS component.

3.3. Space and Missile Systems Center Launch Range Patrick (SMC/OL-U).

3.3.1. Coordinates on PMPs for LSS projects that generate data products used as input to a 45 RMS-managed ERIS component.

4. Safety Software Requirements Management.

4.1. Requirements Definition for New Safety Software Projects. 45th Space Wing Launch Safety Office Flight Analysis (45 SW/SELF) or 45th Space Wing Launch Safety Office Risk Analysis (45 SW/SELR) will draft initial requirements for the proposed LSS. Requirements may include data input, graphical user interface, processing functionality, output content and output format. The 45 SW/SEL analysts will review and comment on the draft requirements. 45 SW/SEL will review the comments and incorporate applicable comments. 45 SW/SELF or 45 SW/SELR will present the updated requirements lists to the SSVB for approval. If acceptable, the SSVB will approve the requirements by signing the requirements document that captures the information required in paragraph 4.2. Attachment 2 provides a template for a SSRM.

4.2. Requirement Change Process.

4.2.1. Requirement Change Request. Anyone associated with the use or development of LSS can request a requirement change by drafting a requirement document and providing this to the respective 45 SW/SEL 4-letter section chief. The request can be for a new requirement, a modification of an existing requirement or a request to delete an existing requirement.

4.2.2. Requirement Change Assessment. Each 45 SW/SEL 4-letter section chief will assess the technical and programmatic aspects of implementing a requested requirement change associated with LSS within their section and provide this information to 45 SW/SEL. The assessment must include an estimate of cost, schedule impacts and impacts to existing requirements and LSS.

4.2.3. Requirement Change Approval. After assessment, the 45 SW/SEL 4-letter section chief will present to the SSVB a recommendation regarding their requested requirement change. If the SSVB approves the requirement, the SSVB chair will sign the requirement document.

4.2.4. Requirement Implementation. The Safety Software Project Lead (SSPL) will be responsible for maintaining the Verification Correlation Requirements Matrix (VCRM) to reflect requirement changes in approved requirement documents. Attachment 3 provides a template for a VCRM. The SSPL will also enter a Deficiency Report (DR) associated with the approved requirement change in a DR database. The SSPL must have the deficiency resolved by a software modification or by developing a suitable workaround.

5. Safety Software Development Planning and Authorization.

5.1. Project Management Plan. If funding and manpower are available for a new 45 SW/SE software project outside of an existing contract, or the new 45 SW/SE software project will affect an external ICD, 45 SW/SED will initiate a software development project to meet validated LSS requirements. 45 SW/SED will task 45 SW/SEL to draft a PMP. At a minimum the PMP will address:

5.1.1. Scope of work.

5.1.2. Software functionality.

5.1.3. Software products.

5.1.4. Software development process.

5.1.5. Software interfaces.

5.1.6. Software version control.

5.1.7. Test.

5.1.8. Verification and validation.

5.1.9. Administration and maintenance.

5.1.10. Documentation and training.

5.1.11. Hardware requirements.

5.1.12. System Security.

5.1.13. Schedule.

5.1.14. The PMP will require 45 OG and SMC/OL-U coordination if the new or modified software produces data that will be used as input to an ERIS component managed by 45 RMS. 45 SW/SED will approve the PMP after it receives appropriate coordination.

5.2. Project Authorization. 45 SW/SEL will present an executive summary of the PMP to the SSVB and submit a Safety Software Project Authorization Memorandum requesting authorization to initiate a software development/verification project. Attachment 4 provides a template for a project authorization memorandum. If warranted, the SSVB chair will sign the memorandum to authorize the software development project and 45 SW/SEL to start a dialog with the contracting office to determine required contract actions.

5.3. Project Execution. In accordance with the approved PMP, LSS development projects will be executed.

6. Safety Software Deficiency Review Board (SSDRB) Responsibilities.

6.1. The SSDRB is responsible for prioritizing and tracking corrective action status of DRs for new LSS under development or existing LSS being modified under sustainment. Recommended SSDRB membership:

6.1.1. The responsible 45 SW/SEL 4-letter section chief or delegate (chair).

6.1.2. Safety Software Project Lead if DRs are associated with a LSS development project.

6.1.3. Additional representatives from the responsible 45 SW/SEL 4-letter section.

6.1.4. A secretariat appointed by 45 SW/SEL.

6.1.5. The 45 SW/SE Information Assurance Manager or delegate.

6.1.6. DR author(s) or delegate(s).

6.2. The SSDRB chair will evaluate all DRs and assign them initial priority categories. The board will then convene to establish and maintain a DR priority list for DR resolution. The SSDRB chair will have responsibility for maintaining the DR database and will call another board to convene when he/she feels reprioritization is required. The 45 SW/SEL analyst will have the responsibility for updating a DR database which includes changing the DR status from “New” to a DRB verified status such as “Assigned”.

7. Safety Software User Evaluation.

7.1. User Evaluation Objectives. The overall evaluation objective is to obtain enough information for the Safety Software User Evaluation Team (SSUET) to make a technically sound Unit Under Test (UUT) validation recommendation to the SSVB based on the UUT’s ability to meet user requirements.

7.2. User Evaluation Execution. Testing will demonstrate how the UUT is properly used and determine if user requirements are either met or not met. At a minimum, the user evaluation shall be performed in accordance with a Safety Software User Evaluation Plan

(SSUEP) which must include a VCRM. For each requirement, the VCRM will list test methods, associated test steps that are in the SSUEP, test pass/fail criteria and pass/fail results. Attachment 3 provides a template for a VCRM and Attachment 5 provides a template for the SSUEP. DRs must be generated and entered into a DR database for unfulfilled requirements. User evaluation results will be documented in a Safety Software User Evaluation Report (SSUER). If the new LSS is to replace existing software, the user evaluation should include comparisons between the new and legacy results with differences explained in the SSUER. Attachment 6 provides a template for a SSUER.

7.3. Safety Software User Evaluation Team (SSUET).

7.3.1. SSUET Composition. For a task that will develop/modify LSS, the SSUET should be formed after the SSVB approves the requirements documentation. SSUET members will be composed of 45 SW/SEL personnel and, if needed, Safety support personnel who are not part of the development team. The responsible 45 SW/SEL 4-letter section chief will approve the team lead and supporting members.

7.3.2. SSUET lead responsibilities:

7.3.2.1. Draft the SSUEP.

7.3.2.2. Execute testing in accordance with the SSUEP.

7.3.2.3. Draft the SSUER which will include a UUT validation recommendation and any use constraints.

7.3.2.4. Brief the user evaluation results to the SSVB.

7.3.2.5. Brief the Independent Verification and Validation (IV&V) results, if accomplished, to the SSVB.

7.3.3. SSUET member responsibilities. The SSUET will ensure the UUT can perform the full range of functionality to ingest data and produce desired outputs needed for ER mission support. SSUET members have the following responsibilities:

7.3.3.1. Support requirement definitions.

7.3.3.2. Participate in technical interchange meetings.

7.3.3.3. Provide user feedback to the developer in support of the test-analyze-fix development process.

7.3.3.4. Assist the SSUET lead in drafting the SSUEP and SSUER.

7.3.3.5. If an IV&V is pursued, provide the following to the IV&V contractor:

7.3.3.5.1. Approval of the IV&V test plan as developed by the IV&V contractor.

7.3.3.5.2. All code relevant to the IV&V (source/executable).

7.3.3.5.3. All documentation and test cases relevant to the IV&V.

8. Safety Software Validation Board (SSVB).

8.1. SSVB Responsibilities. The SSVB approves software requirements, authorizes software development or modification and validates new or updated LSS that is used to support ER missions. The SSVB also coordinates on updates to ICDs that define an interface

between LSS data products and an ERIS component that is managed by 45 RMS. Such ICDs require 45 SW/SED and 45 OG coordination and SMC/OL-U approval.

8.2. SSVB Members. 45 SW/SED will chair the SSVB. Other required SSVB members include the responsible 45 SW/SEL 4-letter section chief, at least one 45 SW/SEL technical lead appointed by the responsible 4-letter section chief, a secretariat appointed by 45 SW/SEL, and the 45 SW/SE Information Assurance Manager (IAM) or delegate. The IAM position is required per Defense Information Assurance Certification and Accreditation Process (control # DCCB-2). For LSS that produces input data for an ERIS component managed by 45 RMS, the secretariat will invite 45 RMS and SMC/OL-U to provide an advisor from their respective offices. Their attendance will be optional.

8.3. Requirements Change Control. In accordance with Section 4.0, the SSVB will approve the addition, deletion or modification of requirements.

8.4. Software Development Project Authorization. In accordance with Section 5.0, the SSVB will authorize software development projects.

8.5. Software Validation.

8.5.1. IV&V. If the LSS is currently in use, then an IV&V is not required unless 45 SW/SEL determines that an update changes critical aspects of the software. If an IV&V is required, then the LSS may not be used as the sole basis for the independent assessment and the software may not be used for an operational assessment until the evaluation is complete and is accepted by the SSVB.

8.5.2. SSVB Scheduling. Prior to scheduling an SSVB, the responsible 45 SW/SEL 4-letter section chief will coordinate with the secretariat to ensure all documents listed below have been generated and are available for SSVB member coordination at least 5 working days prior to convening the board. Once the secretariat has confirmed all of the required documentation is available, the board will convene as scheduled by the secretariat. Prerequisites for the board to convene are:

8.5.2.1. User requirements documented on an approved requirements document have been approved by the SSVB.

8.5.2.2. VCRM approved by the SSUET lead certifying all SSRM requirements have been tested and pass/fail determinations have been made.

8.5.2.3. Pass/fail determinations have been made for all requirements in the VCRM.

8.5.2.4. SSUEP approved by applicable 45 SW/SEL 4-letter section chief certifying that SSUET review is complete and all comments have been addressed.

8.5.2.5. SSUER approved by 4-letter section chief.

8.5.2.5.1. User evaluation conducted IAW SSUEP/VCRM.

8.5.2.5.2. All category 1 DRs have been resolved.

8.5.2.6. Draft SSVM that includes:

8.5.2.6.1. Any acceptance use constraints.

8.5.2.6.2. Acceptance recommendations that are consistent with those in the SSUER.

8.5.2.6.3. If accomplished, IV&V summary/results.

8.5.3. SSVB Execution. The SSUET lead will brief the board on the evaluation criteria and present evidence that the UUT has passed these criteria favorably. The SSVB will evaluate the UUT's demonstrated performance and decide if user requirements have been met, if documentation is complete and adequate, and if version control is present and effective. If these criteria are met, the SSVB chair will sign the SSVM. Attachment 7 provides a template for an SSVM. The SSVM authorizes 45 SW/SEL to use the validated software for ER mission support. It also authorizes the secretariat and 45 RMS to prepare an Operational Acceptance Memorandum package if the LSS data product interfaces with an ERIS component that is managed by 45 RMS. Operational acceptance of such software will be done in accordance with 45 SWI 10-602, *45th Space Wing Eastern Range Acceptance Process*. If the board decides that requirements have not been adequately met, the Secretariat will document the board findings and the SSVB will task the responsible 45 SW/SEL 4-letter section chief to perform corrective action(s).

9. Safety Software Version Control.

9.1. 45 SW/SEL-developed software tools and models can only be used to support an ER mission if the SSVB validated them and, if required, have been operationally accepted by 45 RMS in accordance with 45 SWI 10-602. A signed SSVM authorizes 45 SW/SEL to have the validated software placed under a version control process. The version control process ensures that 45 SW/SEL analysts will use the latest approved software version.

10. ERIS ICD Coordination and Approval.

10.1. New or modified LSS, which will cause an interface change with a 45 RMS-managed ERIS component, will require an ICD update. If the 45 RMS-managed ERIS component is an operational system, LSS data products will be designed to retain the same format and content as that of the current legacy program system-generated data. Such ICD updates require 45 SW/SED and 45 OG coordination prior to SMC/OL-U approval. ICD coordination and approval is depicted in Attachment 8. A web-based tool, such as the SMC/OL-U maintained Visual RV, will be used to manage the timeline and process for ICD update activities.

11. Operations Security (OPSEC).

11.1. All operational processes and software used in support of the 45th Space Wing and Eastern Range operations are critical to mission success. Operations Security processes and policies provide a methodology to mitigate, through the use of traditional security disciplines,

potential compromise or loss of mission due to an adversary's actions. These actions could result in damage to national assets, corruption of operational software, loss of mission, and in the extreme case, loss of life. These outcomes are dependent on the threat and subsequent risk. LSS management will comply with AFI 10-701, *Operations Security*, and local OPSEC procedures to mitigate operational risks.

NINA M. ARMAGNO, Brigadier General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFMAN 33-363, *Management of Records*, 1 Mar 08

AFSPCI91-701, *Launch Safety Program Policy*, 1 Jun 05

45 SWI 10-602, *45th Space Wing Eastern Range Acceptance Process*, 25 Jan 08

Technical Order 00-35D-54, *USAF Deficiency Reporting and Investigation System*, 1 Nov 11

AFI 10-701, *Operations Security*, 8 Jun 11

AFMAN 33-153, *Information Technology (IT) Asset Management (ITAM),* 19 Mar 14

Abbreviations and Acronyms

45 OG—45th Operations Group

45 RMS—45th Range Management Squadron

45 SW/SE—45th Space Wing Safety Office

45 SW/SED—45th Space Wing Chief Safety Engineer

45 SW/SEL—45th Space Wing Launch Safety Office

45 SW/SELF—45th Space Wing Launch Safety Office Flight Analysis

45 SW/SELR—45th Space Wing Launch Safety Office Risk Analysis

DR—Deficiency Report

ER—Eastern Range

ERIS—Eastern Range Instrumentation System

ICD—Interface Control Document

IRR/CCB—Installation Readiness Review/Configuration Control Board

IV&V—Independent Verification and Validation

LSS—Launch Safety Software

OAB—Operational Acceptance Board

PMP—Project Management Plan

SMC/OL—U - Space and Missile Systems Center Launch Range Patrick

SSDRB—Safety Software Deficiency Review Board

SSRM—Safety Software Requirement Memorandum

SSUEP—Safety Software User Evaluation Plan

SSUER—Safety Software User Evaluation Report

SSUET—Safety Software User Evaluation Team

SSPL—Safety Software Project Lead

SSVB—Safety Software Validation Board

SSVM—Safety Software Validation Memorandum

UUT—Unit Under Test

VCRM—Verification Correlation Requirements Matrix

Terms

45 SW Operational Acceptance Board (OAB)— A board chaired by 45 RMS that accepts components and external data sources for the ERIS.

Authority to Operate (ATO)— An ATO is a formal declaration by a Designated Approving Authority that authorizes operation of an automated information system and explicitly accepts the risk to agency operations. The ATO is signed after a Certification Agent certifies that the system has met and passed all requirements to become operational.

Deficiency— A deficiency is a shortcoming of LSS or hardware which precludes it from meeting an approved requirement.

Deficiency Report (DR)— DRs document LSS deficiencies. DRs will be generated and tracked using a database that has been approved by 45 SW/SED.

DR Categories— A management tool used to categorize DRs with respect to mission support impacts. The LSS DR categories will be compliant with Technical Order 00-35D-54, USAF Deficiency Reporting and Investigation System.

Flight Safety Hazards Analysis— Analysis performed to protect the public and workforce from potential blast, debris and toxic hazards associated with rockets, unmanned aerial vehicles, balloons and laser operations.

Launch Safety Software (LSS)— Within this instruction LSS will be used to denote software tools and models developed by 45 SW/SEL to perform Flight Safety Hazards Analysis and Risk Management computations.

Risk Management— Risk management is a process of measuring or assessing risk and then developing strategies to mitigate the risk or reduce it to acceptable levels.

Safety Software Deficiency Review Board (SSDRB)— A formal board chaired by the applicable 45 SW/SEL 4-letter section chief that categorizes the severity of LSS DRs and prioritizes corrective actions for them.

Safety Software Project Lead (SSPL)— The government employee in 45 SW/SEL who is responsible for a LSS development project.

Safety Software Requirement Memorandum (SSRM)— A 45 SW/SED approved memorandum; the SSRM documents requirements for a proposed LSS tool or model. Requirements will address data input, graphical user interface, processing functionality, output content and output format.

Safety Software User Evaluation Plan (SSUEP)— The SSUEP is approved by applicable

45 SW/SEL 4—letter section chief. The SSUEP will provide background information on why the UUT is needed, how it was developed, test objectives and a test schedule.

Safety Software User Evaluation Report (SSUER)— A report that summarizes the test results of the SSUEP. The report should include a validation recommendation and include any use constraints.

Safety Software User Evaluation Team (SSUET)— A team that performs user tests on LSS and, if warranted, recommends it be validated by the SSVB.

Safety Software Validation Board (SSVB)— A formal board chaired by 45 SW/SED that approves LSS requirements, authorizes LSS development or modification, and validates that new or modified LSS can be used by 45 SW/SEL for ER mission support.

Safety Software Validation Memorandum (SSVM)— A 45 SW/SED approved, formal report that provides UUT user evaluation results. It will include legacy comparisons if available, a deficiency report summary, use constraints and associated impacts on mission support, recommended system improvements and if warranted, a recommendation for the SSVB to validate the UUT.

Unit Under Test (UUT)— New/modified LSS being evaluated by a SSUET.

Verification Correlation Requirements Matrix (VCRM)— A matrix that correlates test method(s), test steps, pass/fail criteria and state of compliance for each requirement. A VCRM provides an easy way to ensure all user requirements are tested and documents requirement validation results. The SSUET lead approves the VCRM. A VCRM is a mandatory component for all LSS user evaluations.

Attachment 2

SAFETY SOFTWARE REQUIREMENT MEMORANDUM

Figure A2.1. SAFETY SOFTWARE REQUIREMENT MEMORANDUM

SSVB Date:

Safety Software Program:

Proposed New Requirement, Change or Deletion:

Impacts to ICD, Authority to Operate (ATO) or architecture:

Justification:

Impact if not Implemented:

Requirement Number(s):

Documents Effected:
ICD _____, CSR Ops _____, 127-1 _____
ORD _____, 91-710 _____, Other _____

Prepared by:

Approved by/Disapproved by (circle one):

SSVB Chair:

Coordinated with:

Comments:

Note: Tailored version allowed if approved by 45 SW/SED.

Attachment 3

VERIFICATION CORRELATION REQUIREMENTS MATRIX

A3.1. The VCRM is a multipurpose document. It will be the file of record for requirements definitions, test methods for requirement verifications, test procedures (steps) to test for requirement compliance (can be hyperlinked), pass/fail criteria for requirement compliance and successful requirement compliance. *Note: This shows VCRM format. The actual form will be in landscape layout.*

Table A3.1. VCRM Format

Number	Requirement	Test Method(s)	Test Steps	Pass/Fail Criteria	Pass Yes/No

Requirement number will contain product, component and revision identifiers.

Deleted requirements will be lined through.

Test method will be:
T—Test.
D—Demonstration.
A—Analysis.
I—Inspection.

Verified by SSUET lead:

Note: Tailored version allowed if approved by 45 SW/SED.

Attachment 4

SAFETY SOFTWARE PROJECT AUTHORIZATION MEMORANDUM

Figure A4.1. SAFETY SOFTWARE PROJECT AUTHORIZATION MEMORANDUM

SSVB Date:

Software Development Project Description:

Associated Requirement Number(s):

New Software Produced or Software Modified:

Funding Source:

Contract Vehicle if Applicable:

Required PMP Changes:

Impacts to ICD, ATO, or architecture:

Authorization to Proceed Granted by:

45 SW/SED (Chair)

Coordinated with:

45 OG (required if data is generated for ERIS that is managed by 45 RMS):

SMC/OL-U (required if an ERIS ICD is impacted or required):

Note: Tailored version allowed if approved by 45 SW/SED.

Attachment 5

SAFETY SOFTWARE USER EVALUATION PLAN TEMPLATE

Figure A5.1. SAFETY SOFTWARE USER EVALUATION PLAN TEMPLATE

Title Page - presents software model/sub-function tested, identifies document as the test plan, identifies the author and gives date of report.

Section 1 - **Introduction**: describes functionality of the UUT and test objectives.

Section 2 - **Test Overview**: describes test approach which should include test methods, input data and expected results for successful tests. This section also describes the content in the rest of the test plan/procedure.

Section 3 - **Assumptions**: lists assumptions made in the collection of data, test setup and tester's subject matter knowledge.

Section 4 - **Test Plan Outline**:

Describes how to setup/configure the UUT.
Specifies input data.
Lists or references test steps.
Tells how output data and test logs will be collected/documented.
Describes analysis of output.

Signature Blocks:

SSUET Member Coordination/Comments (required for each team member).

45 SW/SEL 4-letter Section Chief Approval.

Attachment 6

SAFETY SOFTWARE USER EVALUATION REPORT TEMPLATE

Figure A6.1. SAFETY SOFTWARE USER EVALUATION REPORT TEMPLATE

Title Page: presents software model/sub-function tested, identifies document as a user evaluation report, identifies the author and gives date of report.

Section 1 - **Introduction**: describes functionality of the UUT and test objectives.

Section 2 - **Evaluation Summary**: provides overall test approach, gives a synopsis of open and closed deficiency reports, discusses UUT use constraints if any, and provides top-level summary of test results.

Section 3 - **Safety Software Validation Recommendation**: provides the SSUET's recommendation for SSVB validation of the UUT. If the team recommends partial validation, the use constraints and additional testing must be described. This section should contain the same wording as the validation recommendation in the respective SSVM.

Section 4 - **Test Conduct**: State that the user evaluation was conducted in accordance with the user evaluation plan and embed the evaluation plan in this section. A template for the evaluation plan is provided in Attachment 5.

Section 5 - **Findings**: State that the test results are captured in the evaluation plan and embed the evaluation plan in this section.

Signature Blocks:

45 OG Coordination (if required).

SMC Coordination (if required).

SSUET Member Coordination/Comments (required for each team member).

45 SW/SEL 4-letter Section Chief Approval.

Attachment 7

SAFETY SOFTWARE VALIDATION MEMORANDUM

Figure A7.1. SAFETY SOFTWARE VALIDATION MEMORANDUM

SSVB Date:

Unit Under Test:

User Evaluation Report Summary:

Use Constraint(s):

Validation Recommendation:

Prepared by:

Approved by:

45 SW/SED

Coordinated with:

Note: Tailored version allowed if approved by 45 SW/SED.

Attachment 8

SAFETY SOFTWARE/ERIS ICD APPROVAL

Figure A8.1. SAFETY SOFTWARE/ERIS ICD APPROVAL